

New York CAPS Grape Commodity Survey Targets 2016 Summary/Final Report

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- **Grape Commodity Survey (GCS)**
 - *Lobesia botrana* – **European Grape Vine Moth (GVM)**
 - *Eupoecilia ambiguella* – **European Grape Berry Moth (EGBM)**
 - *Epiphyas postvittana* – **Light Brown Apple Moth (LBAM)**
 - *Planococcus ficus* – **Vine Mealybug (VMB)**
 - *Candidatus* Phytoplasma australiense – **Australian Grapevine Yellows**
 - *Candidatus* Phytoplasma vitis – **Flavescence doree**

The 2016 grape commodity survey was conducted in conjunction with Cornell Cooperative Extension's NYS IPM Program and Grape Programs in the main growing regions of New York State; Lake Erie, Finger Lakes, Long Island and the Hudson Valley. Traps were placed in vineyards starting in late June/early July in all regions and were serviced biweekly 6 times. The three target moths involved in the survey are: European Grapevine Moth, European Grape Berry Moth, and Light Brown Apple Moth.

Traps for an additional pest, Vine Mealybug or *Planococcus ficus*, were also placed in Long Island vineyards and nursery blocks in the Finger Lakes and Lake Erie areas.

374 traps were deployed in 38 vineyards total; 7 in the Hudson Valley, 9 in Long Island, 15 in the Finger Lakes Region and 7 in the Lake Erie Region. In addition traps were deployed in 5 nurseries total; 2 in the Finger Lakes Region and 3 in the Lake Erie Region.

1. European Grape Vine Moth (GVM) - *Lobesia botrana*

Delta traps and lures were deployed following the protocol of suspending the trap at a height of 3 foot in the grape trellis and at a distance of 6-foot into the 2nd row in from the SW corner of the vineyard. Vineyards that had been recently planted using vines sourced from California, and other west coast, nurseries were given priority for participation in the program. In vineyards consisting of multiple varieties, traps were placed in the southeast corner of each of the blocks where the variety changed. Traps were deployed in 7 vineyards in the Hudson Valley (Columbia, Dutchess, and Ulster Counties) 9 in Long Island (Suffolk County), 15 in the Finger Lakes Region (Schuyler, Seneca, Steuben, Ontario, Wayne and Yates Counties) and 7 in the Lake Erie Region (Chautauqua County). In addition traps were deployed in 5 nurseries total; 2 in the Finger Lakes Region and 3 in the Lake Erie Region. 116 traps were placed by 4 project cooperators in these 38 vineyards and 5 nurseries. Traps were maintained in the field and

serviced every two weeks resulting in six biweekly visits. All traps were pulled from vineyards by the end of September/beginning of October to facilitate grape harvest.

1,116 moths were collected from the traps July through October (102 in Long Island, 369 in Hudson Valley, 360 in Finger Lakes, and 285 in Lake Erie). Prescreening as well as identification of suspected samples by the Insect Diagnostic Laboratory at Cornell found no evidence of the European Grape Vine Moth. 45 traps with possible positive samples were submitted yielding 379 negative IDs for the target moth.

2. European Grape Berry Moth (EGBM) - *Eupoecilia ambiguella*

Pherocon 1C traps and lures were deployed following the protocol of suspending the trap at a height of 3 foot in the grape trellis at the end post of the 5th row in from the SW corner of the vineyard and the 5th row in from the SE corner of each vineyard surveyed. Traps were deployed in 7 vineyards in the Hudson Valley (Columbia, Dutchess, and Ulster Counties) 9 in Long Island (Suffolk County), 15 in the Finger Lakes Region (Schuyler, Seneca, Steuben, Ontario, Wayne and Yates Counties) and 7 in the Lake Erie Region (Chautauqua County). In addition traps were deployed in 5 nurseries total; 2 in the Finger Lakes Region and 3 in the Lake Erie Region. 116 traps were placed by 4 project cooperators in these 38 vineyards and 5 nurseries. Traps were maintained in the field and serviced every two weeks resulting in six biweekly visits. All traps were pulled from vineyards by the end of September/beginning of October to facilitate grape harvest.

4,761 moths were collected from the traps July through October (487 in Long Island, 518 in Hudson Valley, 2,800 in Finger Lakes, and 956 in Lake Erie). Prescreening as well as identification of suspected samples by the Insect Diagnostic Laboratory at Cornell found no evidence of the European Grape Berry Moth. 40 traps with possible positive samples were submitted yielding 690 negative IDs for the target moth.

3. Light Brown Apple Moth (LBAM) - *Epiphyas postvittana*

Delta traps and lures were deployed following the protocol of suspending the trap at a height of 3 foot in the grape trellis and at a distance of 6-foot into the 2nd row in from the SW corner of the vineyard. Vineyards that had been recently planted using vines sourced from California, and other west coast, nurseries were given priority for participation in the program. In vineyards consisting of multiple varieties, traps were placed in the southeast corner of each of the blocks where the variety changed. Traps were deployed in 7 vineyards in the Hudson Valley (Columbia, Dutchess, and Ulster Counties) 9 in Long Island (Suffolk County), 15 in the Finger Lakes Region (Schuyler, Seneca, Steuben, Ontario, Wayne and Yates Counties) and 7 in the Lake Erie Region (Chautauqua County). In addition traps were deployed in 5 nurseries total; 2 in the Finger Lakes Region and 3 in the Lake Erie Region. 116 traps were placed by 4 project cooperators in these 38 vineyards and 5 nurseries. Traps were maintained in the field and serviced every two weeks resulting in six biweekly visits. All traps were pulled from vineyards by the end of September/beginning of October to facilitate grape harvest.

1,528 moths were collected in the traps from July through October (109 in Long Island, 176 in Hudson Valley, 901 in Finger Lakes, and 342 in Lake Erie). Prescreening as well as identification of suspected samples by the Insect Diagnostic Laboratory at Cornell found no

evidence of the Light Brown Apple Moth. 31 traps with possible positive samples were submitted yielding 173 negative IDs for the target moth.

4. Vine Mealybug (VMB) – *Planococcus ficus*

Pherocon 1C traps and lures were deployed following the protocol of suspending the trap at a height of 3 foot in the grape trellis at the end post of the 5th row in from the SW corner of the vineyard and the 5th row in from the SE corner of each vineyard surveyed. Traps were deployed in 9 vineyards in Long Island (Suffolk County). In addition traps were deployed in 5 nurseries total; 2 in the Finger Lakes Region and 3 in the Lake Erie Region. 24 traps were placed by 3 project cooperators in these 9 vineyards and 5 nurseries. Traps were maintained in the field and serviced every two weeks resulting in six biweekly visits. All traps were pulled from vineyards by the end of September/beginning of October to facilitate grape harvest.

100 samples were collected in the traps from July through October (90 in Long Island, 0 in Lake Erie, and 10 in Finger Lakes). Prescreening as well as identification of suspected samples by the Insect Diagnostic Laboratory at Cornell found no evidence of the Vine Mealybug. 6 traps with possible positive samples were submitted yielding 10 negative IDs.

Visual Inspection for Spotted Laternfly

A visual inspection for Spotted Laternfly was conducted in late September/early October in the same vineyards and nurseries used to conduct the Grape Commodity Survey. No evidence of Spotted Laternfly was found. At this scouting time, egg masses were the target as Spotted Laternfly lays egg masses of 30 – 50 eggs, covered in a brown, mud-like substance on smooth bark surfaces. Spotted Laternfly has a preference for Tree of Heaven/Paradise Tree (*Ailanthus altissima*) but there were no reports of the Tree of Heaven being found in proximity to the vineyards and nurseries scouted.

Visual Inspection for Australian Grapevine Yellows and Flavescence doree

A visual inspection for Australian Grapevine Yellows and Flavescence doree was conducted in the same vineyards and nurseries used to conduct the Grape Commodity Survey (GCS). Visual examinations were conducted in 7 vineyards in the Hudson Valley (Columbia, Dutchess, and Ulster Counties) 9 in Long Island (Suffolk County), 15 in the Finger Lakes Region (Schuyler, Seneca, Steuben, Ontario, Wayne and Yates Counties) and 7 in the Lake Erie Region (Chautauqua County). In addition visual examinations were done in 5 nurseries total; 2 in the Finger Lakes Region and 3 in the Lake Erie Region. There were no reports of Australian Grapevine Yellows or Flavescence doree in any of the 38 vineyards or 5 nurseries involved in the survey.

Virus Sampling in the 2016 CAPS Project

Virus sampling/testing was performed in July and again in September/October of 2016 in the same vineyards and nurseries used to conduct the GCS.

Protocol:

- If possible vineyards that are declining and suspected of having problems with viruses were identified and sampled. If that was not feasible, vineyards were chosen at random.

- In each vineyard a panel was chosen with 4-6 vines. In July, 2-3 young leaves were pulled per vine for a total of 15 leaves. Each vineyard was sampled in 4 sites.
- In September, the same sampling procedure was followed with the exception of selecting mature basal leaves.
- In the nurseries, one young leaf per vine for 15 vines was sampled in July. In September, mature basal leaves of the same plants were chosen.
- The leaves were placed in zip lock bags, labeled and sent overnight to the Marc Fuchs lab for testing.

Spring Virus Sampling

The viruses tested for in the spring sampling were: Grapevine fanleaf Virus (GFLV); Arabis mosaic Virus (ArMV); Tomato ringspot virus/Grapevine yellow vein disease (ToRSV); Tobacco ringspot virus (TRSV); Grapevine virus A (GVA); Tomato black ring virus (TBRV); Strawberry latent ringspot Virus (SLRSV); Raspberry ringspot virus (RpRSV); Grapevine fleck virus (GFkV); Grapevine leafroll-associated virus 1 (GLRaV-1), Grapevine leafroll-associated virus 3 (GLRaV-3), and Grapevine Red Blotch-associated virus (GRBaV).

Fall Virus Sampling

The viruses tested for in the fall sampling were: Grapevine leafroll-associated virus 1 (GLRaV-1), 2 (GLRaV-2), 3 (GLRaV-3), and 4 (GLRaV-4); Grapevine virus A (GVA) and Grapevine red blotch-associated virus (GRBaV).

Results

- **Grapevine Fanleaf Virus (GFLV).** 1 positive found in Finger Lakes.
- **Arabis Mosaic Virus (ArMV).** No positive results.
- **Tomato Ring Spot Virus/Grapevine Yellow Vein Disease (ToRSV).** 2 positives found in the Finger Lakes.
- **Tobacco Ringspot Virus (TRSV).** 2 positives found in the Finger Lakes.
- **Grapevine Virus A (GVA)** 3 found in Long Island.
- **Tomato Black Ring Virus (TBRV).** No positive results.
- **Strawberry Latent Ringspot Virus (SLRSV).** No positive results.
- **Raspberry Ringspot Virus (RpRSV).** No positive results.
- **Grapevine Fleck Virus (GFkV).** No positive results.
- **Grapevine Leafroll – associated virus type 1 (GLRaV-1).** Found in 49 samples – 11 in the Finger Lakes Region, 26 in Long Island, 2 in Hudson Valley, and 10 in the Lake Erie Region.
- **Grapevine Leafroll – associated virus type 2 (GLRaV-2).** No positive results.
- **Grapevine Leafroll – associated virus type 3 (GLRaV-3).** Found in 94 samples – 16 in the Finger Lakes Region, 10 in the Lake Erie Region, 61 in Long Island, and 7 in the Hudson Valley.
- **Grapevine Leafroll – associated virus type 4 (GLRaV-4).** Found in 1 sample in Long Island.

Virus Testing Positive Results(Spring)	#samples total in County	(GFLV)	(ArMV)	(ToRSV)	(TRSV)	(GVA)	(TBRV)	(SLRSV)	(RpRSV)	(GFKV)	(GLRaV-1)	(GLRaV-2)	(GLRaV-3)	(GLRaV-4)
Chautauqua	36	0	0	0	0	0	0	0	0	0	0	0	0	0
Ontario	18	0	0	0	0	0	0	0	0	0	0	0	0	0
Schuyler	13	1	0	0	0	0	0	0	0	0	0	0	0	0
Seneca	30	0	0	1	2	0	0	0	0	0	0	0	0	0
Steuben	4	0	0	1	0	0	0	0	0	0	0	0	0	0
Wayne	8	0	0	0	0	0	0	0	0	0	0	0	0	0
Yates	27	0	0	0	0	0	0	0	0	0	0	0	0	0
Columbia	8	0	0	0	0	0	0	0	0	0	0	0	0	0
Dutchess	8	0	0	0	0	0	0	0	0	0	0	0	0	0
Ulster	12	0	0	0	0	0	0	0	0	0	0	0	0	0
Suffolk	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Virus Testing Positive Results(Fall)	#samples total in County	(GRBaV)	(GVA)	(GLRaV-1)	(GLRaV-2)	(GLRaV-3)	(GLRaV-4)
Chautauqua	36	0	0	5	0	10	0
Ontario	17	0	0	6	0	5	0
Schuyler	12	0	0	0	0	2	0
Seneca	20	0	0	1	0	3	0
Steuben	4	0	0	0	0	1	0
Wayne	4	0	0	1	0	1	0
Yates	17	0	0	3	0	4	0
Columbia	8	0	0	0	0	2	0
Dutchess	8	0	0	1	0	1	0
Ulster	8	0	0	1	0	4	0
Suffolk	170	12	3	26	0	61	1

There were a total of 160 (5 in spring and 150 in fall) positive results out of 468 virus tests completed.